Quest® NetVault® Backup

version 9.1

Built-in Plug-ins User's Guide

NVG-129-9.1-EN-01 05/10/13

QUEST SOFTWARE®
Simplicity At Work®

© 2013 Quest Software, Inc.
ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software, Inc.

The information in this document is provided in connection with Quest products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest products. **EXCEPT AS SET FORTH IN QUEST'S TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.** Quest makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software World Headquarters
LEGAL Dept
5 Polaris Way
Aliso Viejo, CA 92656
email: legal@quest.com

Refer to our Web site (www.quest.com) for regional and international office information.

Patents

This product is protected by U.S. Patents # 7,814,260; 7,913,043; 7,979,650; 8,086,782; 8,145,864; 8,171,247; 8,255,654; and 8,271,755. Protected by Japanese, E.U., French and UK patents 1615131 and 05250687.0, and German patent DE602004002858. Additional patents pending.

Trademarks

Quest, Quest Software, the Quest Software logo, Simplicity at Work, FlashRestore, GigaOS, and NetVault are trademarks and registered trademarks of Quest Software, Inc., and its subsidiaries. For a complete list of Quest Software's trademarks, please see http://www.quest.com/legal/trademarks.aspx. Other trademarks and registered trademarks are property of their respective owners.

QUEST SOFTWARE®
Simplicity At Work™

Table of Contents

Chapter 1: Introducing Quest NetVault Backup Built-in Plug-ins 5

- **Quest NetVault Backup Built-in Plug-ins – At a Glance 5**
- **About this Document 6**
- **Target Audience 6**
- **Recommended Additional Reading 7**
- **About Quest Software 7**
  - *Contacting Quest Software 7*
  - *Quest Support 7*

Chapter 2: Using Plug-in for Consolidation 9

- **Available Backup Consolidation Methods 9**
- **Configuring Default Settings 10**
- **Consolidating Incremental Backups Using the Backup Job Method 11**
  - *Selecting Data for a Backup 11*
  - *Setting Backup Options 12*
  - *Finalizing and Submitting a Job 12*
- **Consolidating Incremental Backups Using the Backup Set Method 13**
- **Creating a Policy for Backup Consolidation 15**
- **Restoring a Consolidated Saveset 16**

Chapter 3: Using Plug-in for Data Copy 17

- **Available Data Copy Methods 17**
- **Configuring Default Settings 18**
- **Creating a Data Copy Using the Backup Job Method 19**
  - *Selecting Data for a Backup 19*
  - *Setting Backup Options 20*
  - *Finalizing and Submitting a Job 25*
- **Creating Data Copies Using the Backup Sets Method 26**
  - *Important Notes 28*
- **Creating a Data Copy Policy 28**

- **Restoring a Data Copy 30**

Chapter 4: Using Plug-in for Databases 31

- **Configuring Default Settings 31**
- **Performing NVDB Backups 33**
  - *Selecting Data for a Backup 33*
  - *Setting Backup Options 34*
  - *Finalizing and Submitting a Job 35*
- **Restoring an NVDB Backup 36**
  - *Prerequisites 36*
  - *Selecting Data for a Restore 36*
  - *Setting Restore Options 39*
  - *Finalizing and Submitting a Job 39*

Chapter 5: Using Plug-in for Raw Devices 41

- **Configuring Default Settings 41**
- **Backing up Raw Devices 42**
  - *Prerequisites 42*
  - *Selecting Data for a Backup 42*
  - *Setting Backup Options 43*
  - *Finalizing and Submitting a Job 44*
- **Restoring a Raw Device Backup 45**
  - *Prerequisites 45*
  - *Selecting Data for a Restore 45*
  - *Finalizing and Submitting a Job 46*
- **Relocating Data to an Alternate Disk or Partition 47**
- **Restoring Data to an Alternate NVBU Client 48**
  - *Prerequisites 48*
  - *Restore Procedure 48*

Chapter 1:

INTRODUCING QUEST NETVAULT BACKUP BUILT-IN PLUG-INS

- Quest NetVault Backup Built-in Plug-ins – At a Glance
- About this Document
- Target Audience
- Recommended Additional Reading
- About Quest Software
  - Contacting Quest Software
  - Quest Support

1.1.0 Quest NetVault Backup Built-in Plug-ins – At a Glance

A standard installation of Quest NetVault Backup (NetVault Backup or NVBU) Server and Client software includes the following built-in plug-ins:

- **Quest NetVault Backup Plug-in *for FileSystem* (Plug-in *for FileSystem*)** – The Plug-in *for FileSystem* increases confidence in the recoverability of critical file system data, and eliminates the need for writing complex backup and recovery scripts. Through an intuitive GUI and automated workflow process, the plug-in offers a centralized console to set up, configure, and create flexible backup policies that account for multiple recovery scenarios. Support for Full, Incremental, and Differential Backups allows you to choose a preferred strategy without requiring you to learn file system internals. The plug-in offers granular control that minimizes downtime by allowing you to restore entire volumes, individual partitions, or individual directories and files quickly and reliably with minimal interaction.
- **Quest NetVault Backup Plug-in *for Consolidation* (Plug-in *for Consolidation*)** – The Plug-in *for Consolidation* eliminates the need to run frequent Full Backups, allowing you to create a composite saveset for Full and Incremental Backups without actually performing a Full Backup. This composite saveset then serves as the base for subsequent Incremental Backups. For example, after an initial Full Backup, you can schedule Incremental or Differential Backups from Monday to Friday, and schedule a

consolidation job on Saturday. The consolidated saveset created on Saturday will be used as the base for next week's Incremental or Differential Backups. The Plug-in *for Consolidation* does not actually backup the data; it just creates a composite set from the existing savesets.

- **Quest NetVault Backup Plug-in *for Data Copy* (Plug-in *for Data Copy*)** – The Plug-in *for Data Copy* facilitates off site storage and disk staging, allowing you to schedule jobs for copying or migrating backups at convenient off peak hours, and thereby shrink your backup windows. You can run a data copy job independently or include it in a backup policy if you want to create data copies or migrate backups on a regular basis. The Plug-in *for Data Copy* does not actually backup the data; it just creates a copy of an existing saveset.
- **Quest NetVault Backup Plug-in *for Databases* (Plug-in *for Databases*)** – The Plug-in *for Databases* allows you to back up critical system data (such as, configuration files, system settings, and data related to backup media, job schedules, and reports) which is essential to recover a functional NVBU system after a failure.
- **Quest NetVault Backup Plug-in *for Raw Devices* (Plug-in *for Raw Devices*)** – The Plug-in *for Raw Devices* protects data on physical disks, allowing you to recover Master Boot Record (MBR), system partitions, and individual user partitions from an point-and-click GUI without writing any complex scripts.

1.2.0 About this Document

This guide provides complete details on using the following plug-ins:

- Plug-in *for Consolidation*
- Plug-in *for Data Copy*
- Plug-in *for Databases*
- Plug-in *for Raw Devices*

For details on using the Plug-in *for FileSystem*, refer to the *Quest NetVault Backup Plug-in for FileSystem User's Guide.*

1.3.0 Target Audience

This guide is intended for backup administrators and other technical personnel who are responsible for designing and implementing a backup strategy for the organization. A good understanding of the operating systems under which the NVBU Server and Clients are running is assumed.

1.4.0 Recommended Additional Reading

- *Quest NetVault Backup Installation Guide* – This guide provides complete details on installing the NVBU Server and Client software.
- *Quest NetVault Backup Administrator's Guide* – This guide describes how to use NVBU and provides comprehensive information on all NVBU features and functionality.
- *Quest NetVault Backup Configuration Guide* – This guide explains how to change the preferences and default settings for NVBU.
- *Quest NetVault Backup Command Line Interface Reference Guide* – This guide provides a detailed description of the command line utilities.

You can download these guides from the Quest website at the following address:

https://support.quest.com/Search/SearchDownloads.aspx

1.5.0 About Quest Software

Established in 1987, Quest Software **(Nasdaq: QSFT)** provides simple and innovative IT management solutions that enable more than 100,000 global customers to save time and money across physical and virtual environments. Quest products solve complex IT challenges ranging from database management, data protection, identity and access management, monitoring, user workspace management to Windows management. For more information, visit www.quest.com.

1.5.1 Contacting Quest Software

Email:	info@quest.com
Mail:	Quest Software, Inc. World Headquarters 5 Polaris Way Aliso Viejo, CA 92656 USA
Web site:	www.quest.com

For regional and international office information, refer to the web site.

1.5.2 Quest Support

Quest Support is available to customers who have a trial version of a Quest product or who have purchased a Quest product and have a valid maintenance contract. Quest Support provides unlimited 24x7 access to our Support Portal at www.quest.com/support.

From our Support Portal, you can do the following:

- Retrieve thousands of solutions from our Knowledge Base
- Download the latest releases and service packs
- Create, update and review Support cases

View the *Global Support Guide* for a detailed explanation of support programs, online services, contact information, policies and procedures.

The guide is available at www.quest.com/support.

This guide is available in English only.

Chapter 2:

USING PLUG-IN *FOR CONSOLIDATION*

- Available Backup Consolidation Methods
- Configuring Default Settings
- Consolidating Incremental Backups Using the Backup Job Method
  - Selecting Data for a Backup
  - Setting Backup Options
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X
- Consolidating Incremental Backups Using the Backup Set Method
- Creating a Policy for Backup Consolidation
- Restoring a Consolidated Saveset

2.1.0 Available Backup Consolidation Methods

The Plug-in *for Consolidation* offers following methods to consolidate Incremental Backups created with the Plug-in *for FileSystem*:

- **Backup Jobs** – The Backup Job method allows you to consolidate all backups up to a particular job. This method is recommended when you want to run an ad-hoc consolidation job. For example, before changing your backup schedule, reusing media containing Incremental Backups, or creating an archive.
- **Backup Sets** – The Backup Set method allows you to consolidate all backups in a backup sequence, up to the last available Incremental Backup. This method can only be used for backups that use a Backup Selection Set. The Backup Set method is recommended when you want to run regular backup consolidation jobs. To define a policy for backup consolidation, you must use the Backup Set method.

Important Notes

- The backup consolidation jobs can only be defined and submitted from the NVBU Server.

- It is recommended that you disable the **Enable Deduplication** option for Incremental Backups that will be consolidated and saved to an NVSD Device. This will eliminate unnecessary overhead of rehydrating the deduplicated Incremental Backups during the consolidation process while enabling the resulting Consolidated Full Backup to still be deduplicated.

2.2.0 Configuring Default Settings

The Backup Jobs method sorts the list of savesets by date and time. By default, the savesets are sorted in descending order (that is, the latest savesets are listed first). To change the sorting to ascending order, use the following steps:

1. Open the configuration window:
   - **Windows and Linux/UNIX**
     - **Using NVBU Configurator** – Start the NVBU Configurator. Click the **Plugin Options** tab, and then click the **Consolidate** subtab.
     - **Using Remote Configurator** – Open the **NVBU Client Management** window. In the **Clients** list, right-click the NVBU Server, and select **Configure**. On the Remote Configurator, click the **Plugin Options** tab, and then click the **Consolidate** subtab.
   - **Mac OS X**
     - **Using NVBU Settings** – Start the NVBU Administrator, and load the **NVBU Settings** pane. Click **Plugin Options**, and then click the **Consolidate** tab.
2. Configure the following parameter:

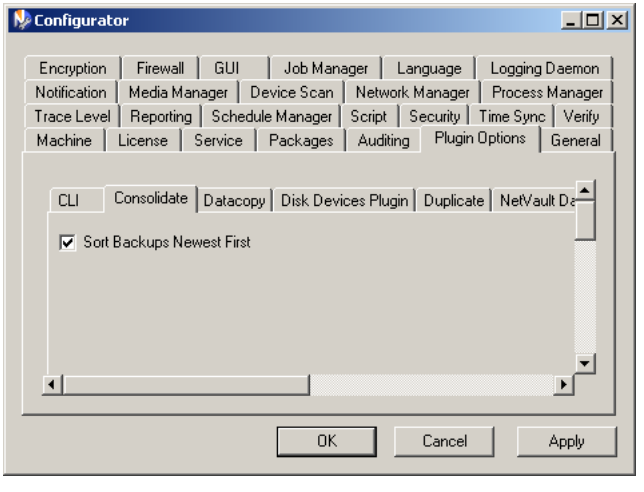


Figure 2-1: *Consolidate tab on NVBU Configurator*

- **Sort Backups Newest First** – This check box is selected by default. To sort the savesets in ascending order (that is, from earliest to latest), clear the check box.

3. Click **Apply** to apply the new settings, and **OK** to close the window.

2.3.0 Consolidating Incremental Backups Using the Backup Job Method

The procedure for consolidating Incremental Backups using the Backup Job method includes the following steps:

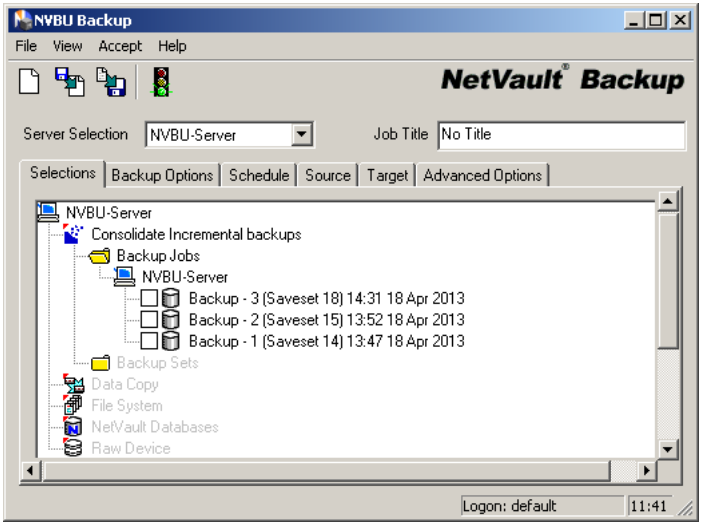
- Selecting Data for a Backup
- Setting Backup Options
- Finalizing and Submitting a Job

2.3.1 Selecting Data for a Backup

To select data for a backup

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.
2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open **Consolidate Incremental Backups**.
4. Open the **Backup Jobs** node.

Figure 2-2: *Selections tab for Backup Job method*

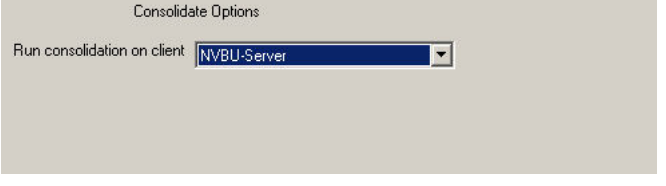


5. Open the NVBU Client for which you want to perform the backup consolidation job.
6. In the list of backup jobs, select the job up to which you want to perform backup consolidation.

2.3.2 Setting Backup Options

Click the **Backup Options** tab, and configure the following parameter:

Figure 2-3: *Backup Options*



- **Run Consolidation On Client** – By default, the consolidation job runs on the NVBU Server. To override this setting and run the job on a particular NVBU Client, select the client in the **Run Consolidation On Client** list.

2.3.3 Finalizing and Submitting a Job

2.3.3.a Submitting a Job from the NVBU Console

To finalize and submit a backup job from the NVBU Console

1. On the **Schedule**, **Source**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on these options, refer to the *Quest NetVault Backup Administrator's Guide*.

2. In **Job Title**, enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
3. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Backup**.

   You can monitor the job progress from the **NVBU Jobs** window, and view the logs from the **NVBU Logs** window. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide*.

2.3.3.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a backup job from the NVBU Administrator on Mac OS X

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on these options, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

Note: The **Source** tab is not available on the **Backup Job** pane.

2. On the **Backup Job** pane, click **Submit**.
3. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
   - **Submit for Scheduling** – Make sure that this check box is selected.
4. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close the dialog.

   You can monitor the job progress from the **Jobs** pane, and view the logs from the **Logs** pane. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

2.4.0 Consolidating Incremental Backups Using the Backup Set Method

To consolidate Incremental Backups using the Backup Set method, perform the following steps:

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.

2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open **Consolidate Incremental Backups**.
4. Open the **Backup Sets** node.

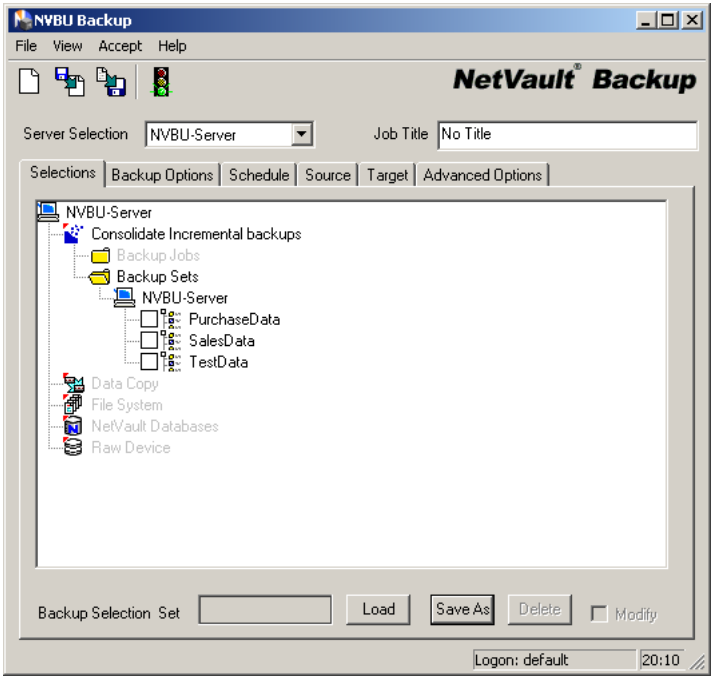


Figure 2-4: *Selections tab for Backup Sets method*

5. Open the NVBU Client for which you want to perform the backup consolidation job.
6. In the list of Backup Selection Sets, select the set that was used to create the backup sequence.
7. By default, the consolidation job runs on the NVBU Server. To override this setting and run the job on a particular NVBU Client, click the **Backup Options** tab. Select the client in the **Run Consolidation On Client** list.
8. Complete and submit the job. For details, refer to *Finalizing and Submitting a Job* on page 12.

2.5.0 Creating a Policy for Backup Consolidation

The following example shows how to create a policy to run backup consolidation jobs on three Clients – Client-1, Client-2 and Client-3. The job consolidates Full and Incremental Backups performed using the Plug-in *for FileSystem*. A Client Group named Group1 with three members Client-1, Client-2 and Client-3 has already been created on the NVBU Server. The Backup Selection Set used for performing the Full and Incremental Backup is named TstBackupSelectionSet. The consolidation job is scheduled to run on Saturday morning at 11 a.m.

Note: Backup Policies can only be created from the NVBU Console or using the CLI utilities. The NVBU Administrator interface does not provide Policy Management functionality.

1. Start the NVBU Console. Click **Policy Management** on the toolbar or **Large Buttons** panel. Alternatively, on the **Administration** menu, click **Policy Management**.
2. Click **New Policy** on the toolbar. Alternatively, on the **File** menu, click **New Policy**.
3. In the **NVBU Policy Editor** window, configure the following parameters:
   - **Policy** – Enter a name for the policy.
   - **Job Name** – Enter a suitable title for the job.
4. Click **Manage Sets** to open the **NVBU Set Management** window.
5. Create the following sets:
   - **Backup Options Set** – On the **Backup Options** tab, configure the **Run Consolidation on Client** parameter, and create a Backup Options Set.
   - **Schedule Set** – On the **Schedule** tab, configure the options to run the job every Saturday at 11 a.m., and create a Schedule Set.
   - **Source Set** – On the **Source** tab, configure the applicable source device and media options, and create a Source Set.
   - **Target Set** – On the **Target** tab, configure the applicable target device and media options, and create a Target Set.
   - **Advanced Options Set** – On the **Advanced Options** tab, configure the applicable options, and create an Advanced Options Set.
6. In the **NVBU Policy Editor** window, configure the following parameters:
   - **Selections** – Select the applicable Backup Selection Set.
   - **Selection Options** – Select the applicable Backup Options Set.
   - **Source** – Select the applicable Source Set.
   - **Target** – Select the applicable Target Set.
   - **Schedule** – Select the applicable Schedule Set.

- **Advanced Options** – Select the applicable Advanced Options Set.

7. Click **Add Clients** on toolbar. Alternatively, on the **Policy** menu, click **Add/Remove Clients**.
8. In the **Available** list, select the NVBU Clients or Client Groups that you want to include in the policy, and then click the Left Arrow.
9. In the **NVBU Policy Editor** window, click **Save Policy** on the toolbar. Alternatively, on the **File** menu, click **Save Policy**.

2.6.0 Restoring a Consolidated Saveset

For a restore, you can either use the original Incremental or Differential saveset, or the Consolidated saveset generated using these savesets. The restore procedure remains the same for the original and the consolidated savesets, and depends on the plug-in used to create the original saveset. For instructions on restoring the data, refer to the relevant section of the *Quest NetVault Backup Plug-in for FileSystem User's Guide*.

Chapter 3:

USING PLUG-IN *FOR DATA COPY*

- Available Data Copy Methods
- Configuring Default Settings
- Creating a Data Copy Using the Backup Job Method
  - Selecting Data for a Backup
  - Selecting the Data Copy Type
  - Configuring Data Copy Options
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X
- Creating Data Copies Using the Backup Sets Method
  - Important Notes
- Creating a Data Copy Policy
- Restoring a Data Copy

3.1.0 Available Data Copy Methods

The Plug-in *for Data Copy* offers following methods to create one or more copies of a backup saveset:

- **Backups** – The Backups method allows you to create a copy of a particular saveset. This method is recommended when you want to run an ad-hoc copy job to copy a saveset.
- **Backup Sets** – The Backup Sets method allows you to copy the latest saveset in a backup sequence. This method can only be used when the backups are performed using a Backup Selection Set. The Backup Set method is recommended when you want to run regular Data Copy jobs. To define a policy for backup consolidation, you must use the Backup Set method.

Important Notes

- The Data Copy jobs can only be defined and submitted from the NVBU Server.

- The Plug-in *for Data Copy* cannot be used to create copies of backups that were created using the **Archive** option on the **Advanced Options** tab.
- The **Archive** option is automatically selected for savesets that are created using the Plug-in *for Data Copy.* Therefore, you cannot use a data copy to create another copy of a saveset.

3.2.0 Configuring Default Settings

The Backups method sorts the list of savesets by date and time. By default, the savesets are sorted in descending order (that is, the latest savesets are listed first). To change the sorting to ascending order, use the following steps:

1. Open the configuration window.
   - **Windows and Linux/UNIX**
     - **Using NVBU Configurator** – Start the NVBU Configurator. Click the **Plugin Options** tab, and then click the **Datacopy** subtab.
     - **Using Remote Configurator** – Open the **NVBU Client Management** window. In the **Clients** list, right-click the NVBU Server, and select **Configure**. On the Remote Configurator, click the **Plugin Options** tab, and then click the **Datacopy** subtab.
   - **Mac OS X**
     - **Using NVBU Settings** – Start the NVBU Administrator, and load the **NVBU Settings** pane. Click **Plugin Options**, and then click the **Datacopy** tab.
2. Configure the following parameter:

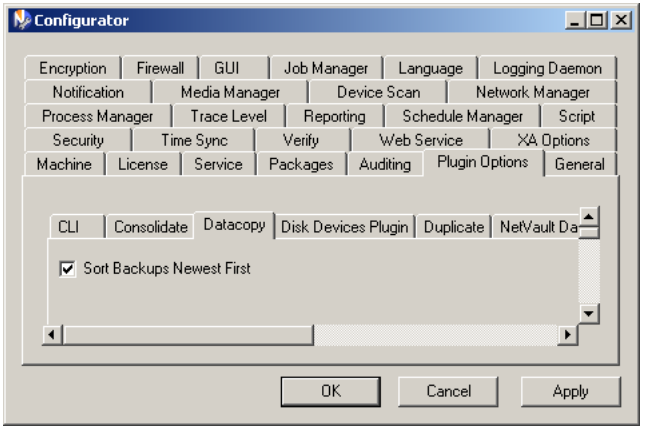


Figure 3-1: *Data Copy tab on NVBU Configurator*

- **Sort Backups Newest First** – This check box is selected by default. To sort the savesets in ascending order (that is, from earliest to latest), clear the check box.

3. Click **Apply** to apply the new settings, and **OK** to close the window.

3.3.0 Creating a Data Copy Using the Backup Job Method

The procedure for creating a data copy using the Backups method includes the following steps:

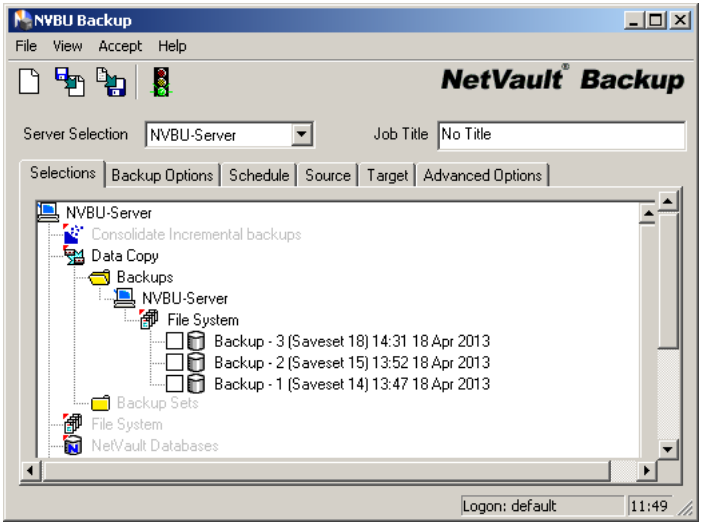
- Selecting Data for a Backup
- Setting Backup Options
  - Selecting the Data Copy Type
  - Configuring Data Copy Options
- Finalizing and Submitting a Job

3.3.1 Selecting Data for a Backup

To select data for a backup

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.
2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open **Data Copy**.
4. Open the **Backups** node.

Figure 3-2: *Selections tab for Backups method*



5. Open the plug-in that was used to generate the saveset.
6. Select the saveset that is to be copied or migrated.

3.3.2 Setting Backup Options

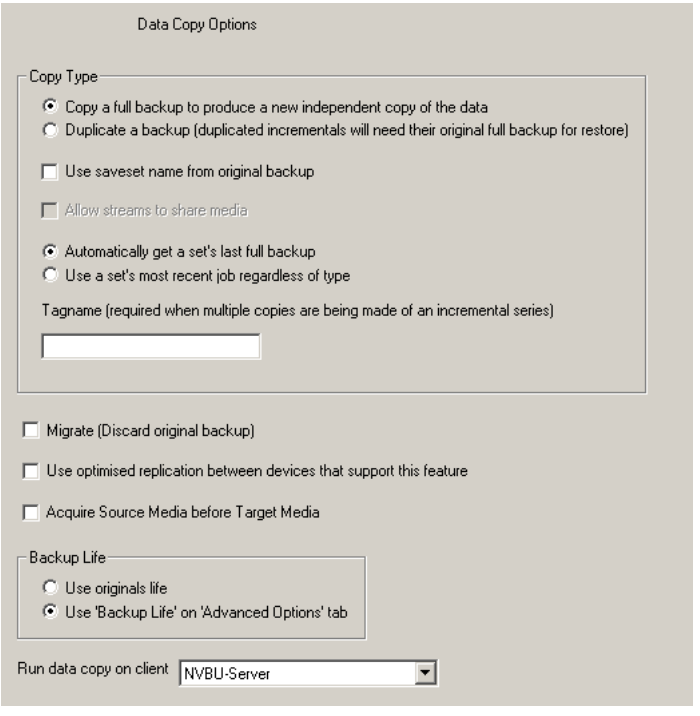
This step includes the following tasks:

- Selecting the Data Copy Type
- Configuring Data Copy Options

3.3.2.a Selecting the Data Copy Type

Click the **Backup Options** tab. Under **Data Copy**, select the applicable option:

Figure 3-3: *Backup Options*


Data Copy Options
Copy Type
Copy a full backup to produce a new independent copy of the data
Duplicate a backup (duplicated incrementals will need their original full backup for restore)
Use saveset name from original backup
Allow streams to share media
Automatically get a set's last full backup
Use a set's most recent job regardless of type
Tagname (required when multiple copies are being made of an incremental series)
Migrate (Discard original backup)
Use optimised replication between devices that support this feature
Acquire Source Media before Target Media
Backup Life
Use originals life
Use 'Backup Life' on 'Advanced Options' tab
Run data copy on client
NVBU-Server

- **Copy a Full Backup to Produce a New Independent Copy of the Data** – This copy type is recommended when you want to create a copy for offsite storage. It removes all links between the Full and Incremental Backups, and allows you to set a new retention period for the copy.

  It can be used to copy both Full and Incremental Backup Types.

Important: With the Plug-in *for FileSystem*, you can create two types of Incremental Backups – Regular Incremental Backups and Dump Type Incremental Backups.

Regular Incremental Backups are linked to the initial Full Backup and previous Incremental Backups. Before creating a data copy of a regular Incremental Backup, you must have created a copy of the initial Full Backup and the previous Incremental Backups in the backup sequence; otherwise, the Plug-in *for DataCopy* will report an error.

Dump Type Incremental Backups are standalone Incremental Backups. Such backups can be copied without creating a copy of any other backup in the backup sequence.

The Data Copy method breaks down a backup into segments and copies the segments to the backup device. During restore, NVBU only restores the primary copy or the secondary copy. NVBU does not interchange backup segments from the primary and the secondary copies. This allows you to encrypt the Data Copy when the primary copy is unencrypted.

- **Use Saveset Name from Original Backup** – By default, the Plug-in *for Data Copy* assigns a new saveset name to an independent copy. This name is derived from the job title. To override this default setting and use the original saveset's name for the copy, select the **Use Saveset Name from Original Backup** check box.

  This option is only available with the **Copy a Full Backup to Produce a New Independent Copy of the Data** option.

- **Duplicate a Backup** – This copy type is recommended when you want to migrate the saveset to another media. The savesets copied in this manner automatically share the original saveset's name and reference. (The **Use Saveset Name from Original Backup** check box will be unavailable when you select this option).

  It can be used to copy both Full and Incremental Backup Types.

  The Duplicate method breaks down the backup into segments and copies the segments to the backup device. During restore, NVBU can interchange the segments from the primary copy and the secondary copy. As it is not possible to mix unencrypted segments with encrypted segments during restore, you cannot enable or disable encryption for a secondary copy created using the Duplicate method. If the original saveset is encrypted, the Duplicate method will create an encrypted copy. If you have not encrypted the primary backup, the copy will also be unencrypted.

  The copies of Incremental Backups will require the Original Full Backup during restore. The restore window will display only one saveset for the original and the copy.

  - **Allow Streams to Share Media** – In conjunction with the **Duplicate a Backup** option, you can select the **Allow Streams to Share Media** check box to convert multiple data streams into a sequential data stream during data copy and write it to the same media. It reduces the number of media items required for data copy. Otherwise, each stream is written to a separate media.

3.3.2.b Configuring Data Copy Options

On the **Backup Options** tab, configure the following parameters:

- **Tagname** – When you use the Plug-in *for Data Copy* to create multiple data copies of an Incremental Backup Sequence, it is necessary to specify a tag that will be used to identify a particular copy. A tag can contain any string

value. Without a tag, the plug-in will not be able to distinguish between multiple copies of a backup sequence.

On the **NVBU Restore** window, the savesets created with the Plug-in *for Data Copy* are labeled as follows:

- Data Copies Created Without a Tag

  ```
  <Saveset Name> - DataCopy of <Selection Set Name>
  (Saveset <#>) <Timestamp>
  ```

- Data Copies Created With a Tag

  ```
  <Saveset Name> - DataCopy of <Saveset #>, Tag '<User
  Tag>' (Saveset <#>) <Timestamp>
  ```

Example – The following example explains how to use this option.

1. Create a Backup Selection Set and perform a Full Backup for the set.
2. Create a Data Copy for the set using device 1. Set a unique **Tagname** on the **Backup Options** tab.
3. Create another Data Copy of the set using device 2. Set a unique **Tagname** on the **Backup Options** tab.
4. Perform an Incremental Backup for the set.
5. Repeat steps 2 and 3 for the Incremental Backup.
6. On the Selections tab of the **NVBU Restore** window, the original backup and both copies of the backup sequence will be displayed.
7. To restore from a specific copy, select that saveset on the **Selections** tab of the **NVBU Restore** window. You can identify a copy with its **Tagname**.

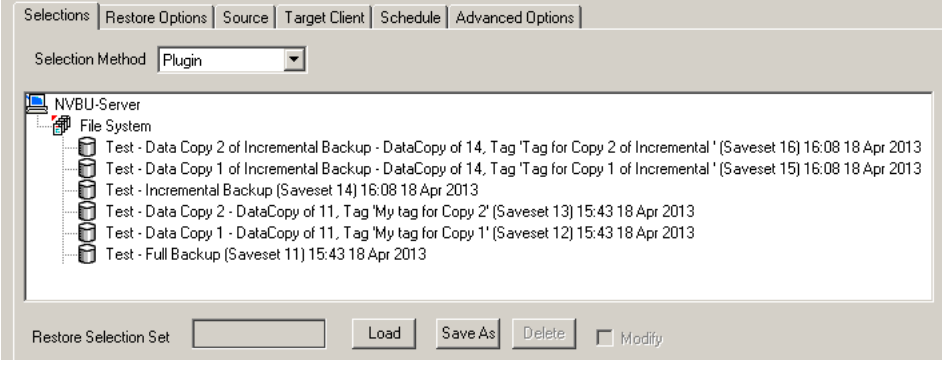

Selections
Restore Options
Source
Target Client
Schedule
Advanced Options
Selection Method
Plugin
NVBU-Server
File System
Test - Data Copy 2 of Incremental Backup - DataCopy of 14, Tag 'Tag for Copy 2 of Incremental ' (Saveset 16) 16:08 18 Apr 2013
Test - Data Copy 1 of Incremental Backup - DataCopy of 14, Tag 'Tag for Copy 1 of Incremental ' (Saveset 15) 16:08 18 Apr 2013
Test - Incremental Backup (Saveset 14) 16:08 18 Apr 2013
Test - Data Copy 2 - DataCopy of 11, Tag 'My tag for Copy 2' (Saveset 13) 15:43 18 Apr 2013
Test - Data Copy 1 - DataCopy of 11, Tag 'My tag for Copy 1' (Saveset 12) 15:43 18 Apr 2013
Test - Full Backup (Saveset 11) 15:43 18 Apr 2013
Restore Selection Set
Load
Save As
Delete
Modify

Figure 3-4: *Savesets with different Tagname on the Selections tab of NVBU Restore window*

- **Migrate** – To migrate the data instead of creating an additional copy, select the **Migrate** check box. On completion of the job, the Plug-in *for Data Copy* will delete the saveset information for the original backup.

Important: While creating copies of Plug-in *for FileSystem* backups, the **Migrate** option can only be selected for Full Backups that do not have any associated Incremental or Differential Backups. If you select this option for a Full Backup that has an associated Incremental or Differential, NVBU will create the secondary copy successfully. However, it will not delete the index for the primary or original backup. For such backups, after creating a backup copy, you need to manually retire the primary or original backup from the **NVBU Media Management** window.

- **Use Optimised Replication Between Devices that Support this Feature** – This feature enables transfer of deduplicated data directly from one device to another device of the same type during a Data Copy or Duplicate operation. It provides an efficient method to create secondary copies and offers the following advantages:
  - Copies data in its deduplicated form, which greatly reduces the amount for data transferred over the network.
  - Copies data directly from the source to the destination without using any resources on the NVBU Server.

  Currently, NVBU supports optimized replication between the following devices:
  - **NVSD Devices** – To perform optimized replication between NVSD Instances, you require NVSD v2.0 or later. Note the following:
    - If the login credentials configured for the source and destination NVSD Servers do not match, the replication will fail.
    - To ensure a successful replication, do one of the following:
      - Disable WebDAV authentication on both NVSD instances.
      - Enable WebDAV authentication only on the source.
      - Configure the same login credentials on both servers.
  - **DD Boost-Enabled Data Domain Systems** – The secondary copy backups between DD Boost-enabled Data Domain Systems use the managed file-level replication feature provided by DD Boost. File-level replication requires the DD Boost Replicator license, which must be installed on both the source and destination Data Domain systems. If the source and target Data Domain systems are running different versions of the Data Domain OS, then for replication to be successful, the target system must be running the higher version of the OS.
- **Acquire Source Media Before Target Media** – When you select this check box, the Plug-in *for Data Copy* tries to acquire the source media before it attempts to acquire the target media for the Data Copy and Duplicate backups.
- **Backup Life** – To set the retention period for the copy, configure the following parameters under **Backup Life**.

- **Use Originals Life** – To use the original saveset's retention period, select **Use Originals Life**.
- **Use 'Backup Life' on 'Advanced Options' tab** – To set a different retention period for the copy, select **Use 'Backup Life' on 'Advanced Options' tab**. Then, set the retention period on the **Advanced Options** tab. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide*.

- **Run Data Copy On** – By default the data copy job runs on the NVBU Server. To run the job on an alternate NVBU Client, select the client in the **Run Data Copy On** list.

3.3.3 Finalizing and Submitting a Job

Important: The **Enable Encryption** option on the **Advanced Options** tab only works with the **Copy a Full Backup to Produce a New Independent Copy of the Data** method. If the original saveset is encrypted, Data Copy will automatically create an encrypted saveset whether the **Enable Encryption** check box is selected or not. Therefore, this option is only useful when you want to create an encrypted copy of an unencrypted original saveset. Encrypted savesets will not be encrypted again if the **Enable Encryption** check box is selected for a copy. For restoring data from such copies, you must use the original saveset's Encryption Key.

3.3.3.a Submitting a Job from the NVBU Console

To finalize and submit a backup job from the NVBU Console

1. On the **Schedule**, **Source**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on these options, refer to the *Quest NetVault Backup Administrator's Guide*.
2. In **Job Title**, enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
3. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Backup**.

   You can monitor the job progress from the **NVBU Jobs** window, and view the logs from the **NVBU Logs** window. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide*.

3.3.3.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a backup job from the NVBU Administrator on Mac OS X

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU Plug-ins. For details on these options, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

Note: The **Source** tab is not available on the **Backup Job** pane.

2. On the **Backup Job** pane, click **Submit**.
3. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
   - **Submit for Scheduling** – Make sure that this check box is selected.
4. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close this dialog.

   You can monitor the job progress from the **Jobs** pane, and view the logs from the **Logs** pane. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

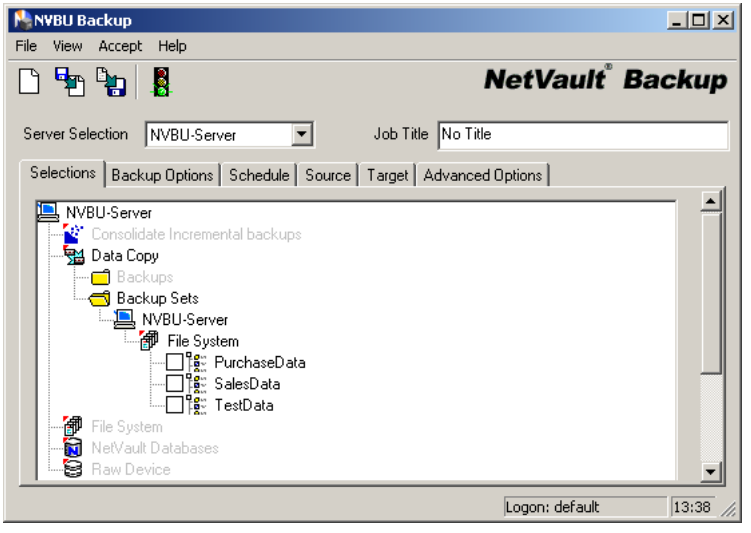
3.4.0 Creating Data Copies Using the Backup Sets Method

To create a copy using the Backup Sets method

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.
2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open **Data Copy**.
4. Open the **Backup Sets** node.

5. Open the plug-in node that was used to generate the saveset.

Figure 3-5: *Selections tab for Backup Set method*



6. In the list of Backup Selection Sets, select the set that was used to create the backup sequence.
7. Click the **Backup Options** tab, and configure the following parameters:
   - **Copy Type** – Under **Copy Type**, select the applicable options:
     - **Copy a Full Backup to Produce a New Independent Copy of the Data**
     - **Use Saveset Name from Original Backup**

     – or –

     - **Duplicate a Backup**
     - **Allow Streams to Share Media**

     For details, refer to *Selecting the Data Copy Type* on page 20.
   - **Automatically Get a Set's Last Full Backup Option** – Select this option to copy the last Full Backup performed using a particular Backup Selection Set. This option can be used if your backup strategy only comprises Full Backups, or you want to make a copy of only Full Backups.
   - **Use a Set's Most Recent Job Regardless of Type Option** – Select this option to copy the last saveset regardless of its type (Full or Incremental Backup). This option is recommended when your backup strategy comprises Full and Incremental Backups and you want to make copies on a regular basis.
8. Configure the remaining backup options. For details, refer to *Configuring Data Copy Options* on page 22

9. Complete and submit the job. For details, refer to *Finalizing and Submitting a Job* on page 25.

3.4.1 Important Notes

- The **Automatically Get a Set's Last Full Backup Option** is incompatible with the backups performed using Quest NetVault Backup Plug-in *for NetWare*. The Plug-in *for Data Copy* will create a copy of the last backup regardless of its type (Full or Incremental).
- The Plug-in *for Data Copy* cannot distinguish between the NDMP Level 0 Full Backup and Levels 1–9 Incremental Backups. An NDMP backup of any level appears as Full Backup to the Plug-in *for Data Copy*. So, if you are trying to make a copy of the latest saveset, and you have selected **Copy a Full Backup to Produce a New Independent Copy of the Data** and **Automatically Get a Set's Last Full Backup options**, the Plug-in *for Data Copy* will still create a copy of the last backup (of any level), and not the Level 0 backup performed using the chosen Backup Selection Set.
- When you create a data copy of any backup sequence, you must create a copy of each backup in the sequence in order to maintain the data integrity of the copy. If you do not create a copy of the original Full Backup or any previous Incremental Backup, then the Data Copy job for a subsequent Incremental Backup will fail with the following message in the NVBU Logs:

  ```
  Cannot DataCopy this incremental as the previous
  DataCopied backup it depends on is missing. Please ensure
  the entire series has been DataCopied.
  ```

3.5.0 Creating a Data Copy Policy

The following example shows how to set up a policy to run a data copy job on three Clients – Client-1, Client-2 and Client-3. The job creates copies of Full and Incremental Backups performed using the Plug-in *for FileSystem*. A Client Group named Group1 containing the three Member Clients Client-1, Client-2 and Client-3 already exists on the NVBU Server. The Backup Selection Set used for the original Full/Incremental Backup is named TstBackupSelectionSet. The data copy job is scheduled to run every night at 10 p.m.

Note: Backup Policies can only be created from the NVBU Console or using the CLI utilities. The NVBU Administrator interface does not provide Policy Management functionality.

1. Start the NVBU Console. Click **Policy Management** on the toolbar or **Large Buttons** panel. Alternatively, on the **Administration** menu, click **Policy Management**.

2. Click **New Policy** on the toolbar. Alternatively, on the **File** menu, click **New Policy**.
3. In the **NVBU Policy Editor** window, configure the following parameters:
   - **Policy** – Enter a name for the policy.
   - **Job Name** – Enter a suitable title for the job.
4. Click **Manage Sets** to open the **NVBU Set Management** window.
5. Create the following sets:
   - **Backup Options Set** – On the **Backup Options** tab, select the following options, and create a Backup Options Set:
     - **Duplicate a Backup**
     - **Allow Streams to Share Media**
     - **Use a Set's Most Recent Job Regardless of Type**
     - **Use Original's Life**
   - **Schedule Set** – On the **Schedule** tab, configure the options to run the job every night at 10 p.m., and create a Schedule Set.
   - **Source Set** – On the **Source** tab, configure the applicable source device and media options, and create a Source Set.
   - **Target Set** – On the **Target** tab, configure the applicable target device and media options, and create a Target Set.
   - **Advanced Options Set** – On the **Advanced Options** tab, configure the required options, and create an Advanced Options Set.
6. In the **NVBU Policy Editor** window, configure the following parameters:
   - **Selections** – Select the applicable Backup Selection Set.
   - **Source** – Select the applicable Source Set.
   - **Selection Options** – Select the applicable Backup Options Set.
   - **Target** – Select the applicable Target Set.
   - **Schedule** – Select the applicable Schedule Set.
   - **Advanced Options** – Select the applicable Advanced Options Set.
7. Click **Add Clients** on toolbar. Alternatively, on the **Policy** menu, click **Add/ Remove Clients**.
8. In the **Available** list, select the NVBU Clients or Client Groups that you want to include in the policy, and click the Left Arrow.
9. In the **NVBU Policy Editor** window, click **Save Policy** on the toolbar. Alternatively, on the **File** menu, click **Save Policy**.

3.6.0 Restoring a Data Copy

For a restore, you can either use the original saveset or a Data Copy. The procedure for restoring data remains the same for both types of savesets and depends on the plug-in used to create the original saveset. For instructions on restoring the data, refer to the relevant section of this guide or the Plug-in User's Guide.

Chapter 4:

USING PLUG-IN *FOR DATABASES*

- Configuring Default Settings
- Performing NVDB Backups
  - Selecting Data for a Backup
  - Setting Backup Options
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X
- Restoring an NVDB Backup
  - Prerequisites
  - Selecting Data for a Restore
  - Setting Restore Options
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X

4.1.0 Configuring Default Settings

The Plug-in *for Databases* includes a **Database Integrity Checker** functionality which can be enabled during NVDB backups to perform disk space checks for the Database, Logs, and Reports Directories. The checker logs a warning message if the available free space goes below the configured minimum levels on the device (drive or partition) on which these directories reside. The default requirements are set as follows:

- Database Directory – 20% of the NVDB size
- Logs Directory – 10% of the total size of the existing log files
- Reports Directory –10% of the total size of the reports database

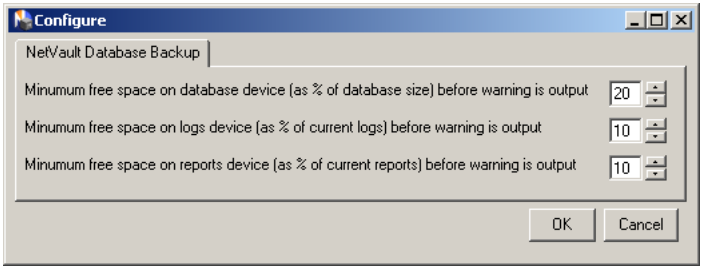
To change these default values, use the following steps:

1. Open the configuration window.

- ***Windows and Linux/UNIX***
  - **Using NVBU Configurator** – Start the NVBU Configurator. Click the **Plugin Options** tab, and then click the **NetVault Database Backup** subtab.
  - **Using Remote Configurator** – Open the **NVBU Client Management** window. In the **Clients** list, right-click the NVBU Server, and select **Configure**. On the Remote Configurator, click the **Plugin Options** tab, and then click the **NetVault Database Backup** subtab.
  - **Using NVBU Console** – Open the **NVBU Backup** window. On the **Selections** tab open the NVBU Server or Client node. Right-click **NetVault Databases**, and select **Configure**.
- ***Mac OS X***
  - **Using NVBU Settings** – Start the NVBU Administrator, and load the **NVBU Settings** pane. Click **Plugin Options**, and then click the **NetVault Database Backup** tab.
  - **Using NVBU Administrator** – Start the NVBU Administrator, and load the **Backup Job** pane. On the **Selections** tab, open the NVBU Server or Client node. Right-click **NetVault Databases**, and select **Configure**.

2. Configure the following parameters:

Figure 4-1: *Configure window*


Configure
NetVault Database Backup
Minumum free space on database device (as % of database size) before warning is output
20
Minumum free space on logs device (as % of current logs) before warning is output
10
Minumum free space on reports device (as % of current reports) before warning is output
10
OK
Cancel

- **Minimum Free Space on Database Device before Warning is Output** – Enter or select the minimum amount for free disk space required on the drive or partition on which the **db** directory resides.By default, it is set to 20% of the total NVDB size. When the available free space goes below the specified value, the Database Integrity Checker logs a warning message.
- **Minimum Free Space on Logs Device before Warning is Output** – Enter or select the minimum amount for free disk space required on the drive or partition on which the **logs** directory resides.By default, it is set to 10% of the total NVDB size. When the available free space goes below the specified value, the Database Integrity Checker logs a warning message.

- **Minimum Free Space on Reports Device before Warning is Output** – Enter or select the minimum amount for free disk space required on the drive or partition on which the **reports** directory resides.By default, it is set to 10% of the total NVDB size. When the available free space goes below the specified value, the Database Integrity Checker logs a warning message.

3. Click **Apply** to apply the new settings, and **OK** to close the window.

4.2.0 Performing NVDB Backups

NVDB is the central repository for the NVBU Server and various configuration files. To safeguard your NVBU Server, you must perform regular backups of the NVDB. NVDB backup allows you to recover an NVBU Server in the event of a disaster. It is recommended that you schedule daily backups of the NVDB once all jobs have completed, and use specific media or media group for these backups. The procedure for backing up the NVDB includes the following steps:

- Selecting Data for a Backup
- Setting Backup Options
- Finalizing and Submitting a Job

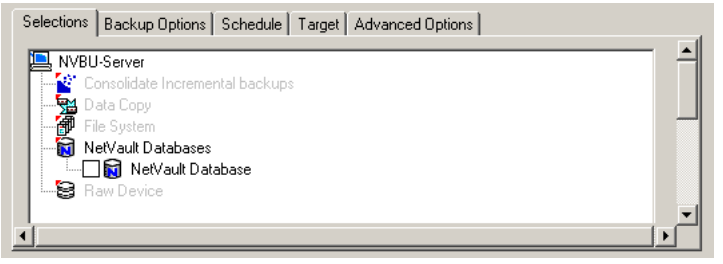
Note: It is recommended that you do not perform an NVDB backup when another job or media scanning is in progress.

4.2.1 Selecting Data for a Backup

To select data for a backup

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.
2. On the **Selections** tab, open the NVBU Server.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open **NetVault Databases**.

Figure 4-2: *Selections tab for NVDB backup*

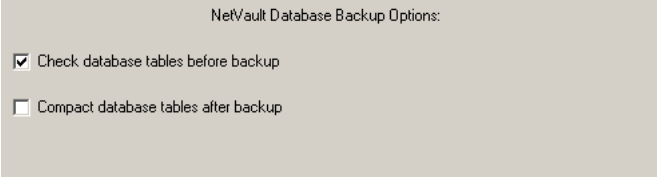


4. Select the **NetVault Database** node.

4.2.2 Setting Backup Options

Click the **Backup Options** tab, and configure the following parameters:

Figure 4-3: *Backup Options*



- **Check Database Tables before Backup** – This option can be used to verify structural, entity, and referential integrity for the Scheduler and Media databases before an NVDB backup. It generates a warning or error log if any inconsistency is detected during the process. The NVDB check option is selected by default.
- **Compact Database Tables after Backup** – This option can be used to reclaim unused space that results from routine database updates and compact the database after an NVDB backup.

  The **Check Database Tables before Backup** option must be selected in order to use the database compact option.

  If you select both options, and subsequently clear the **Check Database Tables before Backup** check box, the **Compact Database Tables after Backup** option will be unavailable and post-backup NVDB compact action will not occur.

Important: If you remove an NVSD Device, a database compact action after and NVDB backup will remove all information related to the backups stored on that device. To use such backups, you need to re-add the NVSD Device to the NVBU Server with the same NVBU Machine Name, and scan it to import all backups. If you do not want to use the NVSD device but retain the backup information in the NVDB, use the **Offline** option instead of removing the NVSD Device.

Important Notes

- The NVDB check and compact actions can also be performed using the **nvmeddbcheck** and **nvscheddbcheck** CLI commands. For more information on these commands, refer to the *Quest NetVault Backup Command Line Interface Reference Guide*.
- The NVDB check and compact actions generate several log messages during execution. For details on these log messages, refer to the "NVDB Check and Compact Logs" section in the *Quest NetVault Backup Command Line Interface Reference Guide*.
- The compact function only updates the database tables and not the backup saveset index files. This action removes empty records in the table files, thereby reducing the size of the database tables.

4.2.3 Finalizing and Submitting a Job

4.2.3.a Submitting a Job from the NVBU Console

To finalize and submit a backup job from the NVBU Console

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide*.
2. In **Job Title**, enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
3. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Backup**.

   You can monitor the job progress from the **NVBU Jobs** window, and view the logs from the **NVBU Logs** window. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide*.

4.2.3.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a backup job from the NVBU Administrator on Mac OS X

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.
2. On the **Backup Job** pane, click **Submit**.
3. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.

- **Submit for Scheduling** – Ensure that this check box is selected.

4. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close the dialog.

   You can monitor the job progress from the **Jobs** pane, and view the logs from the **Logs** pane. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

4.3.0 Restoring an NVDB Backup

An NVDB restore may be required in the following circumstances:

- To perform a disaster recovery for the NVBU Server.
- To migrate NVBU to a new physical system.
- To migrate system settings during an NVBU upgrade.

The procedure for restoring an NVDB backup includes the following steps:

- Prerequisites
- Selecting Data for a Restore
- Setting Restore Options
- Finalizing and Submitting a Job

4.3.1 Prerequisites

Before you start the restore procedure, make sure that the following requirements are met:

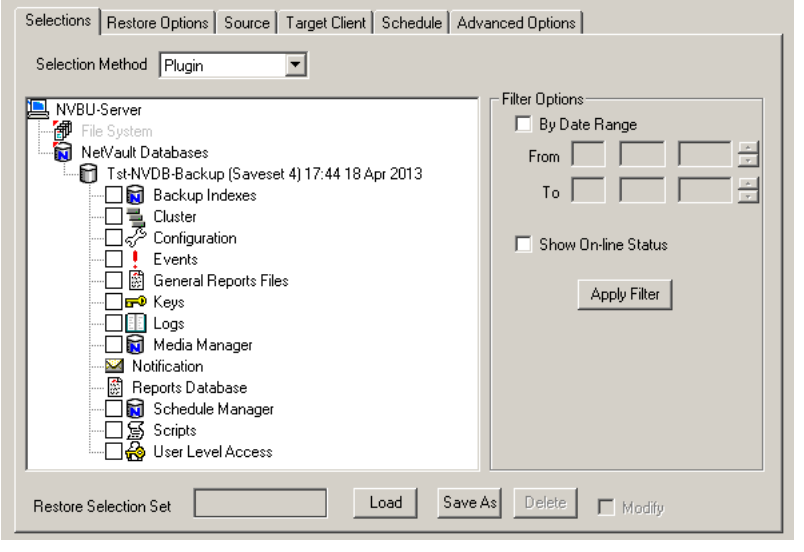
1. Install the NVBU Server software on the target system. The software version should be the same as or higher than the original server.
2. Add a backup device to the NVBU Server through the Automatic Device Configuration Wizard or using the manual procedure. For details on these procedures, refer to the *Quest NetVault Backup Administrator's Guide*.
3. Load the NVDB backup media. In the new NVBU Domain, the media will be marked as "foreign". To scan the media and load the contents, right-click the applicable drive, and select **Scan**.

4.3.2 Selecting Data for a Restore

1. Open the restore window.
   - **NVBU Console** – Start the NVBU Console. Click **Restore** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Restore**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Restore Job** to load the **Restore Job** pane.

2. On the **Selections** tab, open the NVBU Server.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open the **NetVault Databases** node to display all savesets created with the plug-in.
4. In the list of savesets, open the applicable saveset.

Figure 4-4: *Data selection for NVDB restore*



5. Select the components to recover the full database or parts of it.

Warning: Selecting individual components to restore parts of an NVDB backup may introduce inconsistencies in NVDB.

- **Backup Indexes** – Restores the backup indexes. Backup indexes contain the lists of backed up items and their references. Each index is assigned a saveset number. You can expand and browse the saveset contents by accessing the relevant backup index on the **NVBU Restore** window. Backup indexes are stored on the backup media and the disk as part of the Media Database. The indexes provide the position of the individual backed up items so that they can be recovered from the backup media. Backing up the indexes on the media ensures that the content of each saveset is available to view when required, in case the index files are deleted or retired from the Media Database. You can scan the backup

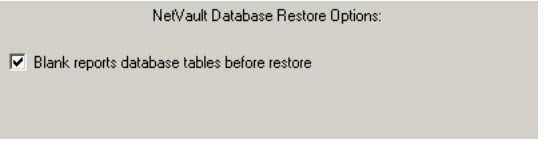
indexes from the archived media, after they have retired or have been deleted from the NVBU Database.

- **Cluster** – Restores cluster-specific configuration and associated client information.
- **Configuration** – Restores NVBU configuration files and settings for the Server and Client systems, including network access and configuration information for plug-ins.
- **Events** – Restores notification methods configured for the NVBU events.
- **General Reports Files** – Restores the files that comprise the NVBU Reporting System, including the report templates, canned reports, and custom reports. This provides a mechanism for restoring customized reports and output of the stored reports.
- **Keys** – Restores licence keys in order to permit the continued operation of NVBU and licensed plug-ins.
- **Logs** – Restores NVBU Logs, which include all messages from the NVBU Server and Clients. It allows you to check the activity of NVBU at a particular point in time.
- **Media Manager** – Restores the Media Database which contains records of all active media, the contents of all backups, how backups are organized, and where they are located.
- **Notification** – Restores historic notifications. Open this node to display the following items:
  - **Global Notification** – Select this node to restore notifications generated by the global notification method.
  - **Operator Messages** – Select this node to restore operator messages.
- **Reports Database** – Restores tables in the Report Database that store persistent information used during report generation. Primarily, these tables store data related to drives, data transfer, event history, media requests, and other data provided by the Statistics Manager process.
- **Schedule Manager** – Restores the Schedule Database. This database contains records of all defined jobs, backup policies, scheduled jobs, and job history, including when jobs last ran and what backups were produced.
- **Scripts** – Restores system-defined and user-defined scripts for NVBU.
- **User Level Access** – Restores user level access settings for the NVBU Server and Clients. This retains the privileges and groups for all NVBU accounts on the Server. This also contains client group details and privileges which affect backup policies.

4.3.3 Setting Restore Options

Click the **Restore Options** tab, and configure the following parameter:

Figure 4-5: *Restore Options*



- **Blank Reports Database Tables before Restore** – To delete the existing data in reports database, leave this check box selected. Clear the check box if you want to retain the existing data in this database

4.3.4 Finalizing and Submitting a Job

4.3.4.a Submitting a Job from the NVBU Console

To finalize and submit a restore job from the NVBU Console

1. In **Job Title**, enter a suitable title for the job.
2. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Restore**.
3. Close the GUI. Do not try to monitor the job progress while the job is running.

Important: The NVBU Service will stop when the restore completes. You must restart the service manually using the NVBU Configurator or the CLI utility.

4.3.4.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a restore job from the NVBU Administrator on Mac OS X

1. On the **Restore Job** pane, click **Submit**.
2. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job.
   - **Submit for Scheduling** – Make sure that this check box is selected.
3. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close this dialog.
4. Close the GUI. Do not try to monitor the job progress while the job is running.

Important: The NVBU Service will stop when the restore completes. You must restart the service manually from the NVBU Settings pane or the CLI utility.

Chapter 5:

USING PLUG-IN *FOR RAW DEVICES*

- Configuring Default Settings
- Backing up Raw Devices
  - Prerequisites
  - Selecting Data for a Backup
  - Setting Backup Options
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X
- Restoring a Raw Device Backup
  - Prerequisites
  - Selecting Data for a Restore
  - Finalizing and Submitting a Job
    - Submitting a Job from the NVBU Console
    - Submitting a Job from the NVBU Administrator on Mac OS X
- Relocating Data to an Alternate Disk or Partition
- Restoring Data to an Alternate NVBU Client
  - Prerequisites
  - Restore Procedure

5.1.0 Configuring Default Settings

Although the Plug-in *for Raw Devices* can protect as many partitions as the underlying OS can support, on Windows-based systems, only 64 disks are listed on the **Selections** tab of the **NVBU Backup** window. This limitation does not apply to Linux systems. If you need to display more than 64 disks Windows-based systems, use the following steps:

1. Open a new text file.
2. Enter the following stanza in this file:

```
[Browse]
Maximum Disks=<Number of Disks to Display>
```

3. Save this file as **nvraw.cfg** in the **.../config** directory (where **...** represents the NVBU installation directory).

5.2.0 Backing up Raw Devices

The procedure for backing up a raw device includes the following steps:

- Prerequisites
- Selecting Data for a Backup
- Setting Backup Options
- Finalizing and Submitting a Job

5.2.1 Prerequisites

Before you start a backup, make sure that the following requirements are met:

- **Linux/UNIX Platforms** – Unmount the file system on the disk that is to be backed up.
- **Windows Platforms** – Ensure the following:
  - The disk that is to be backed up is not in use.
  - All explorer windows are closed.
  - The Disk Management Utility is not running.

Important: On Windows, the Plug-in *for Raw Devices* cannot be used to back up GPT (GUID Partition Table) style partitions. The plug-in only supports MBR (Master Boot Record) style partitions.

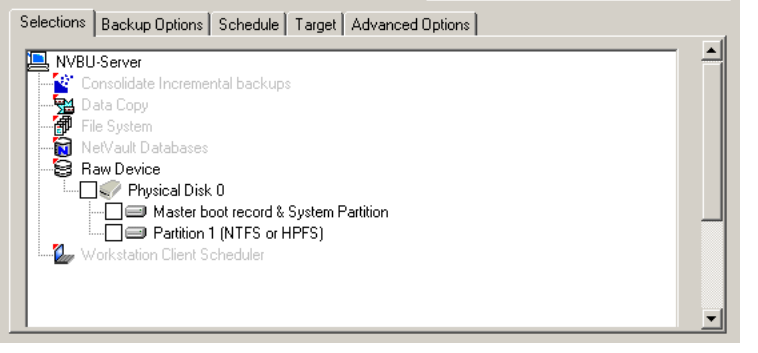
5.2.2 Selecting Data for a Backup

To select data for a backup

1. Open the backup window.
   - **NVBU Console** – Start the NVBU Console on the NVBU Server. Click **Backup** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Backup**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Backup Job** to load the **Backup Job** pane.
2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.

3. In the list of plug-ins, open **Raw Device**.
4. Select the data to be backed up.
   a. ***Linux/UNIX*** (including Mac OS X)
      1. Open the root directory node to display the directory tree.
      2. Open the ***/*dev** node.
      3. Select the target disk.
      4. Select the target partition device file.
   b. ***Windows***

Figure 5-1: *Selections tab for Raw Device backup*

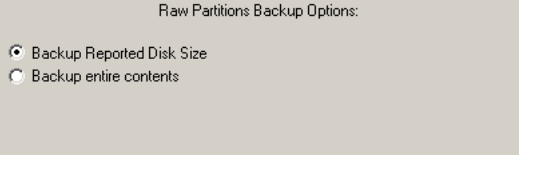


- **Back Up the Entire Physical Disk** – Select the **Physical Disk <n>** node.
- **Back Up Master Boot Record (MBR) and System Partition** – Open the **Physical Disk <n>** node, and select the **Master Boot Record & System Partition Node**.
- **Back Up Individual Partitions** – Open the **Physical Disk <n>** node, and select the **Partition <n>** nodes that are to be backed up.

5.2.3 Setting Backup Options

On Windows, click the **Backup Options** tab, and configure the following parameters:

Figure 5-2: *Raw Devices Backup Options for Windows*



- **Backup Reported Disk Size** – By default, the Plug-in *for Raw Devices* obtains the disk size from the operating system and backs up that amount of data. This option allows you to restore data to any physical disk of the same reported size, even if the actual sizes differ.

- **Backup Entire Contents** – Select this option if the actual and reported disk sizes vary, and you want to backup the entire contents regardless of the reported disk size.

5.2.4 Finalizing and Submitting a Job

5.2.4.a Submitting a Job from the NVBU Console

To finalize and submit a backup job from the NVBU Console

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide*.
2. In **Job Title**, enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
3. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Backup**.

   You can monitor the job progress from the **NVBU Jobs** window, and view the logs from the **NVBU Logs** window. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide*.

5.2.4.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a backup job from the NVBU Administrator on Mac OS X

1. On the **Schedule**, **Target**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.
2. On the **Backup Job** pane, click **Submit**.
3. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job. Specify a detailed title that allows you to easily identify the job for monitoring its progress or restoring data.
   - **Submit for Scheduling** – Ensure that this check box is selected.
4. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close this dialog.

   You can monitor the job progress from the **Jobs** pane, and view the logs from the **Logs** pane. For details on these functions, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

5.3.0 Restoring a Raw Device Backup

The procedure for restoring a raw device backup includes the following steps:

- Prerequisites
- Selecting Data for a Restore
- Finalizing and Submitting a Job

Important: The Plug-in *for Raw Devices* cannot be used to perform cross-platform restores. You cannot restore raw device backups of a Windows Client to a Linux Client, or vice versa.

5.3.1 Prerequisites

Before you start the restore procedure, make sure that the following requirements are met:

- **Restore an Entire Disk** – Unmount the target disk. Make sure that the size of the target disk is equal to or larger than the size of the source disk.
- **Restore an Individual Partition** – On Windows, make sure that the target partition is equal to the source partition. When you restore the data to a partition of a different size, the job completes with the message **"Partition to Restore to a Different Size than the Backed Up Partition**". This type of restore might require reinstallation or reformatting.

  This requirement is not applicable to Linux/UNIX platforms.

5.3.2 Selecting Data for a Restore

To select data for a restore

1. Open the restore window.
   - **NVBU Console** – Start the NVBU Console. Click **Restore** on the toolbar or **Large Buttons** panel. Alternatively, on the **Operations** menu, click **Restore**.
   - **NVBU Administrator on Mac OS X** – Start the NVBU Administrator. On the **NVBU Operations** pane, click **Jobs**. Then, click **New Restore Job** to load the **Restore Job** pane.
2. On the **Selections** tab, open the NVBU Server node.
   - **NVBU Console** – Double-click the server node. Alternatively, right-click the node, and select **Open**.
   - **NVBU Administrator on Mac OS X** – Double-click the server or click the disclosure triangle to the left of the server node. Alternatively, right-click or Ctrl-click the node, and select **Open**.
3. In the list of plug-ins, open the **Raw Device** node to display all savesets created with this plug-in. Each saveset will be labeled with its job title followed by the saveset ID and the backup timestamp.
4. Open the applicable backup saveset to display its contents.

5. Select the disks to be restored. Alternatively, open the parent node and select the partitions to be restored.

5.3.3 Finalizing and Submitting a Job

5.3.3.a Submitting a Job from the NVBU Console

To finalize and submit a restore job

1. On the **Source**, **Schedule**, and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide*.
2. In **Job Title**, enter a suitable title for the job.
3. Click **Submit** on the toolbar. Alternatively, on the **Accept** menu, click **Submit Restore**.

Warning: While restore is in progress, do not access the target drive. If you do so, the job will fail and the partition data will be corrupted. To view the job status, use the **NVBU Jobs** or **NVBU Status** windows.

Additional Considerations for Windows

After a restore completes on a Windows Client, you are required to reboot that machine. It is recommended that you do not try to view or browse the restored data until the machine is rebooted.

5.3.3.b Submitting a Job from the NVBU Administrator on Mac OS X

To finalize and submit a restore job from the NVBU Administrator on Mac OS X

1. On the **Schedule** and **Advanced Options** tabs, configure the applicable options. These options are common to all NVBU plug-ins. For details on configuring these options, refer to the *Quest NetVault Backup Administrator's Guide for Mac OS X*.

Note: The **Source** tab is not available on the **Backup Job** pane.

2. On the **Restore Job** pane, click **Submit**.
3. In the job list dialog, configure the following parameters:
   - **Job Name** – Enter a suitable title for the job.
   - **Submit for Scheduling** – Ensure that this check box is selected.
4. Click **OK**. A dialog with a message and Job ID will appear. Click **OK** to close the dialog.

Warning: While restore is in progress, do not access the target drive. If you do so, the job will fail and the partition data will be corrupted. To view the job status, use the **Jobs** pane.

5.4.0 Relocating Data to an Alternate Disk or Partition

During a restore, you can relocate data to an alternate disk or a partition on the original NVBU Client. This feature can be used to copy or move data when the original disk is corrupted, or when you do not want to overwrite the existing data. When performing this type of restore, consider the following:

- On Windows, MBR can be restored to an alternate disk without recreating the individual partitions.
- An MBR can be relocated to any disk, but it must be copied to partition zero on that disk.
- A backup can be relocated to a designated disk or partition using the disk and partition numbers on the target.

To restore a backup to an alternate disk or partition

1. Select the data to be restored. For details, refer to *Selecting Data for a Restore* on page 45.
2. Right-click the applicable item, and select **Rename**.
3. In the **Restore-Rename** window, select the **Relocate to** check box, and enter the following information:
   - ***Linux/UNIX***
     - Enter the full path to the new disk.
   - ***Windows***
     - **Relocate Data to an Alternate Disk** – Enter the target disk number. For example,

       `Disk 1`

       – or –

       `1`
     - **Relocate Data to an Alternate Partition** – Enter the disk number and the partition number. For example,

       `Disk 1 Partition 4`

       – or –

       `1 4`
4. Click **OK**.

5. Complete and submit the job. For details, refer to *Finalizing and Submitting a Job* on page 46.

5.5.0 Restoring Data to an Alternate NVBU Client

During a restore, you can relocate data to an alternate NVBU Client. This feature can be used while performing a server migration or disaster recovery operation. The procedure for relocating data to an alternate NVBU Client includes the following steps:

- Prerequisites
- Restore Procedure

5.5.1 Prerequisites

Before proceeding, complete the following tasks:

- Install the NVBU Server or Client software on the target machine. For details, refer to *Quest NetVault Backup Installation Guide*.
- Add the client to the NVBU Server. For details, refer to *Quest NetVault Backup Administrator's Guide*.

5.5.2 Restore Procedure

To restore data to an alternate client

1. Select the data to be restored. For details, refer to *Selecting Data for a Restore* on page 45.
2. To relocate data to a different partition or disk, refer to *Relocating Data to an Alternate Disk or Partition* on page 47.
3. Click the **Target Client** tab.
4. Select the alternate system in the NVBU Client list.
5. Complete and submit the job. For details, refer to *Finalizing and Submitting a Job* on page 46.